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# Botanical Gazette.

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**Editorial.**—THE GENUS *SENECIO* contains more than 1,000 species, but still new ones are being described.

ON PAGE 224 in the last GAZETTE it is stated that *Yucca macrocarpa*, Engelmänn, has seeds "rugose-runcinated." Of course the manuscript shows "rugose ruminated."

MR. W. W. BAILEY has been appointed Professor of Natural History (Botany) and Curator of the Herbaria at Brown University, to meet the requirements of S. T. Olney's will. It is a well deserved appointment and one very gratifying to Prof. Bailey's friends.

DR. GRAY is back in England again from his trip on the Continent, with headquarters, as formerly, at Kew.

A LATE COPY of *Nature* announces the death of Dr. Ludwig Rabenhorst of Meissen (Saxony). He was a well known botanist and editor of the *Hedwigia*.

MR. JOHN SANDERSON of Natal has just died. He was an indefatigable explorer of the South African flora and in his honor was named the genus *Sandersonia*.

PROFESSOR P. F. REINSCH has for some time been studying with the microscope sections of coal. Having made his sections in a peculiar and difficult way he has obtained 1,200 perfect ones, and with these he upsets all our previous notions in regard to the nature of coal. The Professor does not expect us to accept his views, for we are creatures of habit, but he does expect us to help observe and "carry the light of science into this dark field of hereditary beliefs." The central ideas are as follows: The organic forms of the coal are Protophytes, that is, "plants without distinct cell structure, with sporadic enclosures of spores and tissue fragments of cryptogamous and still higher plants." Prof. Reinsch groups these forms into seven generic types, and fifty-two specific forms are described and figured. The well known rapidity with which such low forms under favorable conditions propagate would seem to account easily for the enormous accumulation of the vegetable material of our coal measures. The different kinds of coal might also be explained by the prevailing protophytes of the stratum. In the last *American Naturalist* George A. Koenig gives a good review of this work of Prof. Reinsch.

DR. ALEXANDER DICKSON in the last *Journal of Botany* considers, with the help of two plates, the morphology of the pitcher of *Cepha-*

*lotus follicularis*. With regard to the morphology of the parts of the leaf of *Nepenthes*, he comes to the conclusion that in this well known genus "we have to deal with a leaf the lamina of which is interrupted in the middle of its course by becoming reduced to its midrib, and that while the proximal portion of the lamina retains its typical form of a flat expansion, the distal portion becomes peltately expanded into a funnel or pitcher."

AS WE ARE going to press Dr. Farlow's monograph on New England Algæ comes to hand. As it is so late in the season he distributes them without binding. As soon as copies can be bound they will be on sale at the Naturalist's Bureau, Salem, Mass. An artificial key makes it of use even to those who have no intimate knowledge of the structure of Algæ. Every person on the sea shore this summer, who is at all scientifically inclined, should have a copy of this monograph.

### Home and Foreign Modes of Teaching Botany. III.—

Though somewhat out of the usual order for a botanical journal to discuss modes of teaching, I offer the following, on the simple ground that the time appears to be ripe for it. Until within the last ten years botany in the United States has been with the many students and with most of the teachers a mere science of nomenclature, hardly rising to the dignity of true systematic study. This doubtless arises from two causes: first, because of want of means to enter upon other fields of work in the vegetable kingdom; and second, because the mass of students simply caught the enthusiasm of the great teachers whose energies were bent upon reducing to some respectable order the vegetable cohorts of the land, though the former for want of time were unable to reach the inspiration which was founded upon the deepest insight into the anatomy and physiology of plants. Even this measure of attainment is commendable and has at least led to the capacity for discovering what others have to say about any given plant, and so paved the way for the more thorough modes of these coming years. We are commencing to feel that even without a name a plant may teach us much that is worth knowing, to which knowledge it is all the better that we shall add the name as well.

How shall we teach botany then that it may meet modern wants, and associate itself properly with its biological ideas which are now doing so much to shape modern mental culture?

Our best appeal here is to the facts, and I believe I am safe in saying that the whole, or nearly the whole American impulse in botany owes its origin, directly or indirectly, to Cambridge. Certainly it has been a prolific teacher of teachers; so prolific that we may well ask its methods. These may be summed up in the one sentence: *The teacher will keep you on the track, but you must find out for yourself.*

The same fundamental idea characterizes the celebrated laboratories of Germany, and notably, the oldest and probably the most productive one, that of Prof. deBary. One essential difference obtains however between the American and German laboratories; we give